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Customer Number

Patent
Case No.: 54676US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: RAJAN, SUNDAR J.

Application No.: 09/937587

Confirmation No.: 2684

Filed: March 30, 1999

Group Art Unit 1772

Title: ADHESION-ENHANCING SURFACES FOR MARKING MATERIALS

AMENDED BRIEF ON APPEAL

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is an appeal from the Office Action mailed on September 7, 2006, finally rejecting claims 1-4, 7-19 and 37.

☒ Any required fee will be paid at the time of EFS-Web submission.

☒ If necessary, charge any required fee, or credit any overpayment to Deposit Account No. 13-3723.

A Notice of Appeal in this application was filed via EFS-WEB on December 4, 2006, and was received in the USPTO on December 4, 2006.

REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

STATUS OF CLAIMS

Claims 1-4 and 7-37 are pending.

Claims 20-36 are withdrawn.

Claims 1-4, 7-19 and 37 stand rejected.

STATUS OF AMENDMENTS

The amendment filed July 31, 2007 was entered August 9, 2007.

An amendment was filed August 16, 2007 requesting correction of a typographical error in the independent claims.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 recites, "A signage article comprising:
a substrate comprising a noncellulosic organic polymeric surface (p. 7, lines 20-21),
a surface exposed to the outdoors comprising a radiation cured coating (reference numeral 82 of FIGS. 3-4; p. 7, lines 21-23) crosslinked by exposure to radiation selected from the group consisting of ultraviolet radiation, visible radiation, electron beam radiation, and combinations thereof (p. 15, lines 11-20) disposed on the noncellulosic organic polymeric surface; and

a marking material (122 of FIG. 4; p. 25, lines 12+) disposed on the radiation cured coating, wherein the marking material is not substantially removed from the signage article upon wiping the marking material with gasoline for five cycles (p. 12, lines 25-32).

The marking material preferably typically comprises a colorant and certain (i.e. polymeric) binders as recited in dependent claim 4 (p. 26, lines 21-31).

Independent claim 18 recites the same features as independent claim 1 with the exception that the signage article comprises retroreflective sheeting (62 of FIGS. 3-4, p. 9, lines 28 to p. 10, line 2) comprising an organic polymeric surface (as the substrate) and that the radiation cured coating specifically comprises an acrylate (p. 16, lines 29-32).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Grounds of Rejection

Claims 1-4, 7-19 and 37 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Orensteen et al., U.S. Patent No. 5,508,105 in view of Lu, U.S. Patent No, 5,670,096.

ARGUMENT

Orensteen relates to polymeric sheeting materials directly thermally printed upon with a thermal printing system and a resin-based colorant/binder. The polymeric sheeting material comprises a core sheet and a thermally receptive print receptive surface on the core sheet.

With reference to the following Fig. 3, multi-function layer 82 represents a surface (e.g. exposed to the outdoors) having marking material 122.

Fig. 3 of Orensteen U.S. Patent No. 5,508,105

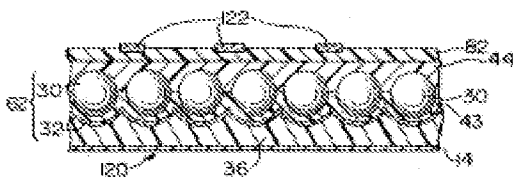


Fig. 3

The Examiner acknowledges that Orensteen fails to teach that such multi-function layer comprises a radiation cured coating (i.e. crosslinked by exposure to radiation selected from the group consisting of ultraviolet radiation, visible radiation, electron beam radiation, and combination thereof).

The Examiner alleges that it would be obvious to utilize the radiation cured spacing layer of Lu as the multi-function surface layer of Orensteen to arrive at the claimed invention.

According to MPEP 706.02(j), to establish a prima facie case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second there must be reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

Is there some suggestion or motivation in the references to modify or combine the teachings?

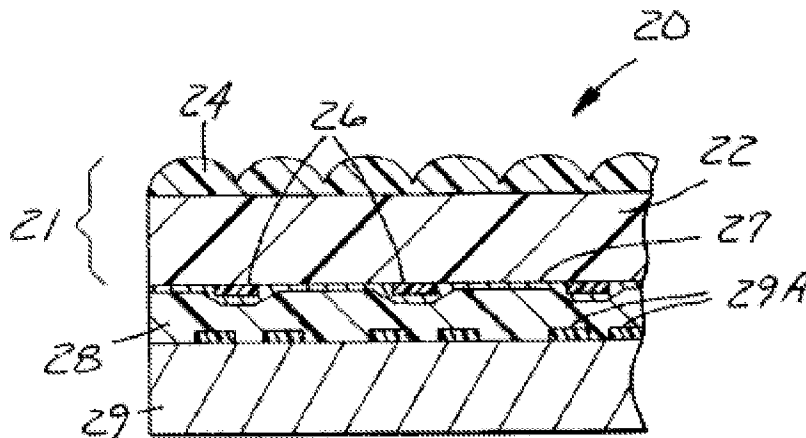
As previously discussed Orensteen et al. is directed to polymeric sheeting directly thermally printed upon. Since, Lu does not teach or suggest that the spacing layer can be thermally printed upon, there is no motivation to replace the multi-function layer of Orensteen with the spacing layer of Lu as suggested by the Examiner and expect that such spacing layer will provide both adequate adhesion to the marking material in combination with the claimed gasoline resistance.

Do the prior art references teach all the claim limitation?

Appellant's claimed invention requires "a surface exposed to the outdoors comprising a radiation cured coating". The multi-function surface layer of Orensteen et al. is exposed to the outdoors, yet does not comprise a radiation cured coating. Accordingly, as acknowledged by the Examiner, Orensteen et al. does not teach this claim limitation

Based on Fig. 2 of Lu as follows, spacing layer 22 is clearly disposed between the array 24 of microlenses and continuous transparent reflective layer 27. Accordingly, although such spacing layer may comprise a radiation cured composition, such spacing layer is clearly not exposed to the outdoors. Therefore, Lu also fails to teach this claim limitation.

Fig. 2 of Lu U.S. Patent No. 5,670,096



Appellant's independent claims also recite "a marking material disposed on the radiation cured coating, wherein the marking material is not substantially removed from the signage article upon wiping the marking material with gasoline for five cycles". The Examiner

alleges that such property is inherent and stated that the burden of proof is shifted to applicant to show that the prior art products do not necessarily or inherently possess such characteristic.

Appellant submits that the only combinations of radiation cured compositions (presumably suitable as the spacing layer) and marking materials that are described in Lu in enough specificity to actually make a comparative example are set forth in the examples beginning at column 10.

However, in each example a colorless or colored ink was applied to either a polycarbonate or polyvinyl chloride (overlay) film and not to a radiation cured spacing layer. Since Lu does not teach an enabling description of a “marking material disposed on the radiation cured coating”, the teachings of Lu cannot possibly inherently possess the claimed gasoline resistance.

CONCLUSION

There is no motivation to employ the radiation cured spacing layer of Lu as a surface layer exposed to the outdoors. Even if such motivation did exist, the combination of Orenstein et al. with Lu does not meet all the claim limitation. Please reverse the Examiner on all counts. Assuming that the board agrees that the claimed gasoline resistance property is not taught by, nor an inherent property of the references, the Appellants respectfully request consideration of withdrawn claims 21, 35 and 36 that also recite this same property.

Respectfully submitted,

August 23, 2007

Date

By: /Carolyn A. Fischer/

Carolyn A. Fischer, Reg. No.: 39,091

Telephone No.: 651-575-3915

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

CLAIMS APPENDIX

1. (previously presented) A signage article comprising:
 - a substrate comprising a noncellulosic organic polymeric surface,
 - a surface exposed to the outdoors comprising a radiation cured coating crosslinked by exposure radiation selected from the group consisting of ultraviolet radiation, visible radiation, electron beam radiation, and combinations thereof disposed on the noncellulosic organic polymeric surface; and
 - a marking material disposed on the radiation cured coating, wherein the marking material is not substantially removed from the signage article upon wiping the marking material with gasoline for five cycles.
2. (original) The signage article of claim 1 wherein the substrate comprising a noncellulosic organic polymeric surface comprises retroreflective sheeting.
3. (original) The signage article of claim 2 wherein the retroreflective sheeting is part of a validation sticker.
4. (original) The signage article of claim 1 wherein the marking material comprises a colorant and a binder and the binder comprises a polymer selected from the group of a polyester, a vinyl, a polyolefin, a polyvinyl acetal, an alkyl or aryl substituted acrylate or methacrylate, a copolymer of ethylene or propylene with acrylic acid, methacrylic acid, or vinyl acetate, and combinations thereof.
- 5-6 (cancelled)
7. (previously presented) The signage article of claim 1 wherein the radiation cured coating is derived from a UV-curable composition that comprises an acrylate.
8. (original) The signage article of claim 7 wherein the acrylate comprises an aliphatic acrylated urethane.

9. (original) The signage article of claim 1 wherein the marking material is not substantially removed upon wiping the marking material with gasoline for ten cycles.
10. (original) The signage article of claim 8 wherein the marking material is not substantially removed upon wiping the marking material with gasoline for twenty-five cycles.
11. (original) The signage article of claim 1 wherein the marking material is not substantially removed upon abrading the marking material for 1000 scrub cycles.
12. (original) The signage article of claim 1 wherein the marking material is not substantially removed upon applying a pressure sensitive adhesive-coated tape to the marking material under thumb pressure and removing it.
13. (original) The signage article of claim 1 wherein the radiation cured coating is not substantially removed upon applying a pressure sensitive adhesive-coated tape to the radiation cured coating under thumb pressure and removing it.
14. (original) The signage article of claim 1 wherein the radiation cured coating is not substantially removed upon wiping the radiation cured coating with gasoline for five cycles.
15. (original) The signage article of claim 1 wherein the radiation cured coating is not substantially removed upon abrading the radiation cured coating for 1000 scrub cycles.
16. (original) The signage article of claim 1 wherein the radiation cured coating is pattern coated.
17. (original) The signage article of claim 1 which does not include a protective coating over the marking material.
18. (previously presented) A signage article comprising:

a retroreflective sheeting comprising an organic polymeric surface;

a surface exposed to the outdoors comprising a radiation cured coating disposed on the organic polymeric surface wherein the coating comprises an acrylate and the coating is crosslinked by exposure radiation selected from the group consisting of ultraviolet radiation, visible radiation, electron beam radiation, and combinations thereof;

a marking material disposed on the radiation cured coating; wherein the marking material is not substantially removed from the signage article upon wiping the marking material with gasoline for five cycles.

19. (previously presented) The signage article of claim 18 wherein the coating comprises an aliphatic acrylated urethane.

20. (withdrawn) A method of making a signage article comprising:

providing a substrate comprising a noncellulosic organic polymeric surface and a radiation cured coating disposed thereon; and

applying a marking material to the radiation cured coating using a technique selected from the group of electrostatic printing, ion deposition printing, magnetographic printing, inkjet printing, letter press printing, offset printing, and gravure printing.

21. (withdrawn) The method of claim 20 wherein the marking material is not substantially removed upon wiping the marking material with gasoline for five cycles.

22. (withdrawn) The method of claim 20 wherein the signage article does not include a protective coating over the marking material.

23. (withdrawn) The method of claim 20 wherein the substrate comprising a noncellulosic organic polymeric surface comprises retroreflective sheeting

24. (withdrawn) The method of claim 20 wherein the marking material comprises a colorant and a binder comprising a polymer selected from the group of a polyester, a vinyl, a polyolefin, a polyvinyl acetal, an alkyl or aryl substituted acrylate or methacrylate.

a copolymer of ethylene or propylene with acrylic acid, methacrylic acid, or vinyl acetate, and combinations thereof.

25. (withdrawn) The method of claim 20 wherein the radiation cured coating is derived from an UV-curable composition.

26. (withdrawn) A method of making a signage article comprising:

providing a substrate comprising a noncellulosic organic polymeric surface; and
applying a marking material to the noncellulosic organic polymeric surface using a technique selected from the group of electrophotographic printing and gravure printing; wherein the marking material is not substantially removed upon wiping the marking material with gasoline for five cycles.

27. (withdrawn) The method of claim 26 wherein the signage article does not include a protective coating over the marking material.

28. (withdrawn) The method of claim 26 wherein the substrate comprising a noncellulosic organic polymeric surface is retroreflective sheeting.

29. (withdrawn) The method of claim 26 wherein the noncellulosic organic polymeric surface comprises a radiation cured coating onto which the marking material is applied.

30. (withdrawn) A method of making a signage article comprising:

providing a substrate comprising a noncellulosic organic polymeric surface; and
applying a marking material to the noncellulosic organic polymeric surface using a technique selected from the group of letter press printing and offset press printing;
wherein the marking material is not substantially removed upon wiping the marking material with gasoline for five cycles; and
further wherein the signage article does not include a protective cover layer.

31. (withdrawn) The method of claim 30 wherein the substrate comprising a noncellulosic organic polymeric surface is retroreflective sheeting.

32. (withdrawn) The method of claim 30 wherein the organic polymeric surface comprises a radiation cured coating onto which the marking material is applied.

33. (withdrawn) The method of claim 32 wherein the radiation cured coating is derived from an UV-curable composition.

34. (withdrawn) A method of making a validation sticker, the method comprising:
providing a validation sticker comprising a noncellulosic organic polymeric surface; and
screen printing a marking material onto the noncellulosic organic polymeric surface;
wherein the marking material is not substantially removed upon wiping the marking material with gasoline for five cycles; and
further wherein the validation sticker does not include a protective cover layer.

35. (withdrawn) A method of making a signage article comprising:
providing a substrate comprising a noncellulosic organic polymeric surface having a radiation cured coating thereon; and
screen printing a marking material onto the radiation cured coating;
wherein the marking material is not substantially removed upon wiping the marking material with gasoline for five cycles; and
further wherein the signage article does not include a protective cover layer.

36. (withdrawn) A method of making a signage article comprising:
providing a substrate comprising a noncellulosic organic polymeric surface having a radiation cured coating thereon; and
applying a marking material onto the radiation cured coating using thermal mass transfer printing;
wherein the marking material is not substantially removed upon wiping the marking material with gasoline for five cycles.

37. (previously presented) The signage article of claim 1 wherein the article is selected from the group consisting of a labeling product, a product authentication article, a window sticker, an inspection sticker, a parking permit, an expiration sticker, a license plate, a traffic sign, and a road marking.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.